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HARVARD

RRC NEWSLETTER

RUSSIAN RESEARCH CENTER

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INDUSTRIAL PRODUCTION FIGURES
FOR THE FIRST 11 MONTHS OF 1985

Product	Nov. 1985	Jan. Nov.- 1985	% Jan-Nov. 1985 over Jan-Nov. 1984
Electricity (bil.kw.hrs)	137	1394	104
Petroleum (inc. gas condensate) (mil.tons)	49.2	545	97
Natural Gas (bil.cu.mtrs)	55.6	585	109
Coal(mil.tons)	58.8	663	102
Steel (mil.tons)	13.0	141	99.6
Fertilizer (mil.tons)	2.9	30.2	107
Metal-cutting tools (mil. rubles)	217	2423	112
Robots (1000s)	1.1	13.5	105
Computer Technology (bil. rubles)	0.4	3.8	112
Tractors(mils.)	4.2	48.1	104
Paper (mil. tons)	0.5	5.5	102
Cement (mil. tons)	11.1	120	100.3
Meat(mil. tons)	0.8	9.0	102
Margerine (mil. tons)	0.1	1.3	99
Watches(mils.)	5.3	61.6	100.5
Radios(mils.)	0.7	8.0	94
Television sets (mils.)	0.8	8.5	104
Automobiles (milss.)	0.1	1.2	99.9

INDUSTRIAL PRODUCTION FIGURES FOR THE FIRST 11 MONTHS OF 1985

Oil production continues to recover. Comparing November 1985 with November 1984, production is down just about 1%. That continues to be an improvement not only from October but particularly from the earlier months of 1985. For the eleven month period as a whole, production is down 3%. It still seems reasonable to believe that when the figures are out for December, or for January 1986, production will be about equal to what it had been a year earlier. Based on the results so far, it looks like total production for 1985 should amount to something like 595 million tons, a fraction under 12 million barrels a day. While that would represent a drop of approximately 18 million tons from 1984, approximately .4 million barrels a day, that is better than the drop which was anticipated somewhat earlier in the year of 25 million tons which would equal .5 million barrels a day.

As for the other industries, production continues to improve in the coal industry. Comparing November 1985 with November 1984, production was up 3%, whereas for the whole eleven months, the average is up 2%. Similarly, with steel production, production was up 2% although for the whole eleven month period it was down .7% In contrast however, the marginal rate of growth in electricity is somewhat lower than the average. The same thing is true about natural gas production. Nonetheless, neither industry is in trouble.

In sum, Gorbachev's discipline campaign still seems to be working.

CURRENCY FIGURES

Rubles Purchased Per 100	Dec. 1984	Nov. 1985	Dec. 1985
Austrian shilling	3.95	4.23	4.30
U.K. pound	102.33	110.81	109.58
W. German mark	27.68	31.25	30.24
U.S. dollar	85.85	77.71	76.42
French franc	9.03	9.77	9.91
Japanese yen	.348	.382	.381
Italian lira	.0448	.0441	.0447
Swiss franc	33.58	36.31	36.65

No significant changes in the currency figures as of mid-December 1985. The dollar continued its pattern of slight decline which has been evident the last few months. But the amount is minor, moving from 77.71 rubles per 100 dollars to 76.42.

ARDEN HOUSE - THE TENTH ANNUAL CONFERENCE

ARDEN HOUSE SCHEDULE IN THE MAIL

As announced earlier, the program for the tenth annual Harvard-Columbia Arden House Conference on U.S.--Soviet Affairs is near completion. We have already received an acceptance from Ambassador Arthur Hartman in Moscow to be the keynote speaker on March 21st. Deputy Assistant Secretary of State Mark Palmer and National Security Council Advisor Jack Matlock have also indicated that they also expect to participate. The Congressional panel will include Senator Paul Simon, Senator Paul Sarbanes and Representative David McCurdy. At least two other Senators have indicated tenatively that they may be able to attend.

After the recent meetings in Geneva, it should be particularly interesting to hear what took place from those who were involved in the discussions. So, please mark your calendars on March 21st to the 23rd for Arden House. The first draft of the program and an application form are in the mail. If you do not receive one in two weeks, please let us know. Also, please spread the word about the conference to any of your colleagues who you think might be interested in attending.

SECOND CORPORATE SPONSOR PROGRAM

The next Corporate Sponsor Program will focus on relations between the German Democratic Republic (East Germany) and the Soviet Union. The conference will be held Monday, February 10, 1986 at the Harvard Faculty Club here in Cambridge. It is being organized by Norman Naimark and promises to provide us an interesting look at German-Soviet relations. A copy of the final program and an enrollment form are enclosed. There are additions to the program that was sent out last year. Two new speakers have been added, John Kiser and Steven Larrabee. Please respond soon if you would like to attend the conference.

LIVESTOCK HERDS (Millions)

	12/1/84	12/1/85	11/1/85 as % of 11/1/84	12/1/85 as % of 12/1/85
Cattle	94.6	94.2	99.4	99.5
Cows	29.6	29.2	99.0	98.6
Hogs	60.1	59.1	97.2	98.3
Sheep & Goats	115.8	113.5	97.6	98.0
Chickens	737.6	752.6	102.1	102.0

On the whole, Soviet herds continue to be below the levels of a year ago. The number of cows in particular seems to have fallen relatively faster than the other animals. Nonetheless, whether this is because of an intentional desire to produce fewer but fatter cows is still unclear but given the fact that meat production is still increasing, the Soviets do not seem to have any serious problem although there have been reports in Soviet newspapers about poor distribution practices making it difficult to get the meat that has been produced out on the shelves.

THE RUSSIAN RESEARCH CENTER takes no official stand on any economic or political trend. The views and analyses expressed in this Newsletter are those of the authors directly associated with the article, or unless otherwise stated, with those of the editors, Marshall I. Goldman and Gary Eynatian. RRC @ 1986

LETTER TO THE EDITOR

Dear Marshall:

The question is often asked: How can the Soviets continue to find new oil in order to maintain a satisfactory reserves-to-production ratio? A recent article in Geologiya Nefti i Gaza (No. 4, 1985), entitled "Prospects for oil and gas in the Neocomian sediments of the Tyumen Region," by I.I. Nesterov and others, suggests where these reserves are to be found. They write that the potential of this region is far from exhausted. The most favorable area for new finds is a belt 30 to 80 km wide that extends 300 km in a north-northeast direction from Mamontor field on the south to Muravlenko field on the north (see map). Now the map shows only those pools in Lower Cretaceous pay zone BS10. There are 16 pay zones in the Lower Cretaceous as well as additional ones in the Jurassic. The significant information in the article, however, is the area on the map with diagonal-ruled lines. This is where the new oil is expected to be found in horizon BS10. Prospects are similar for the other pay zones as well. Only time will tell whether such fields as Surtomin and Kholmogor will rival Samotlor in reserves.

Sincerely,

James W. Clarke
Geologist
World Energy Program
United States Dept. of
the Interior
Geological Survey

-enclosed map reproduced on the-
-following page-

Oil-gas map of pay zone BS_{10} of West Siberian basin.
1-Boundary of lithologic seal; 2-boundary where seal becomes sandy; 3- oil and gas pools; 4-favorable traps for oil and gas; 5-areas of prime importance for oil exploration.

Myths That Drive the Arms Race

FRANKLYN D. HOLZMAN

Many thoughtful observers in America believe that the military might of the Warsaw Pact nations, especially the Soviet Union, has been increasing relative to that of the NATO nations, especially the United States—and that, as a result, the Warsaw Pact has achieved military parity or pushed ahead of NATO. This build-up, moreover, is taken as *prima facie* evidence that the Warsaw Pact nations have aggressive intentions toward their neighbors.

What explains such a momentous shift in the arms race? The usual answer is that the Soviet Union has increased military spending more than the United States has. To reverse this dangerous trend, naturally, the United States and its allies have been planning similar increases. As Ronald Reagan put it in his State of the Union message on February 18, 1981, "I believe my duty as President requires that I recommend increases in defense spending over the coming years. Since 1970, the Soviet Union has invested $300 billion more in its military forces than we have." In the two and a half years since that address, the President's apprehensions about Soviet aggressiveness have been reflected in the sharp rise in our military spending and in a steady deterioration of relations in practically every area in which the two nations interact.

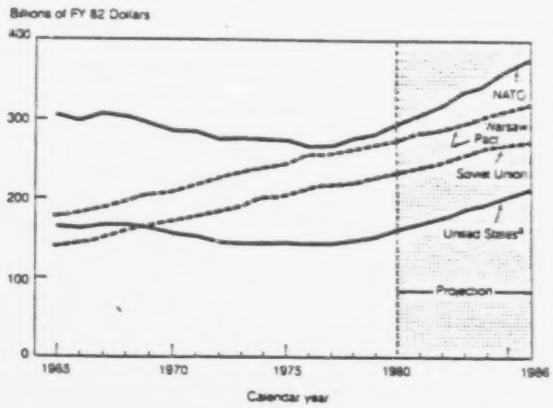
But there is considerable evidence that U.S. estimates of Soviet and Warsaw Pact military expenditures are incorrectly calculated and misleadingly presented. With proper calculation and interpretation, the spending gaps that favor the Soviet bloc largely disappear. This calls into question the magnitude of the Soviet bloc's military build-up and weakens the Administration's claims that the build-up is necessarily offensive rather than defensive.

Deducting the Chinese front

Several factors help to explain what may be a distorted view of Soviet-bloc military spending. Perhaps most important is the tendency of bureaucrats, politicians, and the press to summarize complicated computations with a few simple figures. Two such figures are the CIA's annual estimates, widely quoted, that the USSR is currently outspending the United States on defense by 50 percent, and that over the decade 1971-1980 it outspent us by $420 billion (an update of President Reagan's $300 billion).

Once these figures surface, they begin to have a life of their own; rarely mentioned are the numerous qualifications attached to them by the CIA when they were first released. While the two figures presented may be valid for some purposes, for others they are misleading and inappropriate. Suppose, for example, we want a figure that represents the confrontation between the United States and the USSR. This is the way President Reagan used the $300-billion figure in his State of the Union address. For that purpose, the 50 percent and $420-billion figures are inappropriate, because a large part of Soviet military spending is irrelevant to the superpower confrontation. For example, the Soviet Union maintains an army of roughly 750,000 men on its border with China. According to the 1979 annual report of then Defense Secretary Harold Brown, the Soviets "have felt obliged to allocate up to about 20 percent of their total defense effort to the Far East and the PRC [People's Republic of China]."

Figure 1 NATO and Warsaw Pact Total Defense Costs



[a]Southeast Asia increment excluded (i.e., Vietnam costs)

Source: Department of Defense, *Annual Report*, Fiscal Year 1982.

Money spent by the Soviet Union to support a large army across 5,000 miles of inhospitable terrain has thus not been available to build tanks, planes, and missiles that might be used against the United States and NATO. If 15 percent of Soviet expenditures is subtracted from the total (the other 5 percent is taken to represent Soviet expenditures easily switchable to the West plus U.S. expenditures designed for other theaters), the current gap is reduced from 50 percent to 27.5 percent and the 1971-80 expenditure gap is reduced by $230 billion—that is, from $420 billion to $190 billion (all in 1979 dollars).

Thus, removing expenditures directed at China roughly halves both the current and the ten-year spending gaps. The Department of Defense's practice of excluding U.S. expenditures on Vietnam when comparing NATO and Warsaw Pact total defense costs (see footnote to chart) supports the appropriateness of removing these expenditures.

The allies' contributions

Finding a true estimate of the gap between Warsaw Pact and NATO "confrontation" spending requires another major adjustment. The CIA restricts its published estimates to comparisons of military spending by the United States and the USSR. This establishes a framework for virtually all government and media dis-

cussions of military spending. In effect, these discussions imply that the United States and the USSR confront each other without allies. If the contributions of the other NATO and Warsaw Pact nations were either inconsequential or of roughly equal magnitude, this sort of calculation would make sense. However, as Harold Brown put it in the same annual report, "We are fortunate in having prosperous and willing allies who can help counterbalance the Soviet effort. The Soviets are not so fortunate." According to the authoritative International Institute of Strategic Services in London, America's NATO allies spent $94.9 billion in 1980, or almost six times more than the $16.7 billion spent by Warsaw Pact nations other than the Soviet Union. In fact, France, Great Britain, and West Germany *each* spent more than all the Soviet Union's Warsaw Pact allies added together.

If contributions by our allies and the Soviet Union's allies are factored in, the imbalance between NATO and Warsaw Pact military spending is sharply reversed. As of 1980, NATO was still outspending the Warsaw Pact—over the decade, by more than $250 billion, despite the huge USSR-U.S. dollar gap calculated by the CIA (see chart). The $250-billion difference in NATO's favor makes no correction for Soviet expenditures directed at China. If we take into account the $230 billion that the Soviets are estimated to have directed at China, the total difference in military spending between NATO and the Warsaw Pact nations rises to $480 billion.

The problem of dollar values

Another major distortion in comparisons of East-West military spending stems from the practice of relying on dollar valuations to compare the two defense establishments. As the CIA acknowledges: "Dollar cost calculations tend to overstate Soviet defense activities relative to those of the United States. . . . Given different resource endowments and technologies, countries tend to use more of the resources that are relatively cheap—and less of those that are relatively expensive—for a given purpose. A comparison drawn in terms of the prices of one country thus tends to overstate the relative value of the activities of the other."

This so-called index-number effect is not hard to understand. The Soviets pay their soldiers a very low wage and, perhaps partly for this reason, have more than twice as many men and women in uniform as we do. When we value their 4.5 million military personnel on the basis of *our* average annual pay, which is close to $20,000, the result is a very high estimate of Soviet spending. The *reductio ad absurdum* of this methodology is the recently revealed (though unofficial) CIA estimate of Chinese military spending in dollars, which purports to show that the Chinese government is currently mounting a defense effort equal to our own. This bizarre conclusion arises from a calculation of the cost of mobilizing the enormous Chinese army at near U.S. pay scales.

The usual, and proper, procedure when comparing real costs in two different monetary systems is to calculate expenditures in the currencies of both nations, in this case in rubles as well as in dollars. The dollar estimate provides an upper limit of Soviet expenditures, the ruble estimate a lower limit (since it exaggerates U.S. expenditures by putting a very high ruble price on our more advanced military technology). An average of the two, usually a geometric mean, can be calculated if one wants a single figure. In most of its other U.S.-USSR comparisons, the CIA follows this procedure.

The CIA currently makes defense estimates in both dollars and rubles. However, the ruble comparison, once presented, is ignored, and the geometric mean is not presented at all. The reason for this practice is not difficult to discern: until a few years ago, the agency did not know the costs in rubles for many Soviet weapons or other defense matériel. The CIA now claims to have many more prices, and should, therefore, be able to present the geometric means of the dollar and ruble comparisons as the official estimate. Since the dollar comparison shows the Soviets outspending us by 50 percent and the ruble comparison reduces the difference to 30 percent, the geometric mean works out to 39.6 percent. If this change is combined with an adjustment for forces on the Chinese border, the current difference between U.S. and Soviet "confrontation" spending shrinks to below 20 percent, and the ten-year gap between U.S. and Soviet military spending is reduced to below $100 billion (from $420 billion). It also widens the NATO-Warsaw Pact ten-year gap to roughly $550 billion, *in our favor*.

One more adjustment affects the figures: on September 20, 1983, at a Joint Economic Committee hearing, the CIA revised its estimate of the growth of Soviet military spending since 1976 from 4-5 percent per year to "about 2 percent" in light of the fact that ". . . procurement of military hardware—the largest category of [Soviet] defense spending—was almost flat in 1976-81," a trend which is "continuing." This reduces the USSR-U.S. ten-year spending gap by perhaps another $30 billion as of 1980 and $50 billion by 1982; reduces the 1982 gap by another 5 percent (by CIA estimate and after accounting for the rise in U.S. expenditures); and increases the NATO-Warsaw Pact gap by corresponding amounts. It also reduces one's confidence in the U.S. intelligence community's ability to estimate Soviet hardware expenditures.

Before we leave index numbers, two more points need to be clarified. First, American advocates of larger military appropriations for equipment procurement point out that the Soviet equipment build-up is made possible by the very low wages the USSR pays its soldiers. As William Perry, former Undersecretary of Defense for research and engineering, put it in a 1982 review of James Fallows's book *National Defense*, "they can devote half of their budget to equipment procurement while we devote less than a quarter of ours to equipment . . .". While Dr. Perry's statement is true as far as it goes, it neglects the fact, as put by Stansfield Turner, a former director of the CIA, that "military hardware is much more expensive than manpower in the Soviet Union, while in the United States manpower is relatively more expensive than hardware . . .". So, the Russians need to spend a greater percentage of their military budget on equipment; we need to spend a greater percentage on manpower.

Second, if Soviet military expenditures *vis-à-vis* the United States are exaggerated, U.S. estimates of the percentage of Soviet gross national product devoted to those expenditures (ME/GNP) are also likely to be exaggerated. This is true for at least two reasons. Using the American definition of defense expenditures, the CIA estimated ME/GNP to have been 11-12 percent from 1970 to 1979, 12-13 percent in 1980 and 13-13.5 percent in 1982, the figure presented to the Joint Economic Committee on September 20, 1983. In presenting this figure, the CIA apparently continued to extrapolate ME at 4-5 percent rather than at the lower 2 percent growth rate. Extrapolating at 2 percent results in an ME/GNP of 10.8-11.8 percent for both 1980 and 1982.

The second factor exaggerating ME/GNP relates to price weights. The proper way to measure Soviet military expenditures in relation to GNP for 1982 would be to value both in 1982 rubles. Unfortunately, the most recent set of ruble prices for military equipment available to our intelligence establishment is for 1970. So, for lack of a better alternative, the CIA is forced to measure Soviet military expenditures and GNP for the years since 1970 in so-called "constant 1970 ruble prices."

If trends in ruble prices of military equipment were representative of GNP as a whole, then it would not make much difference whether 1970 or 1982 prices were used in the estimate. In fact, however, because of rapid technological advances in Soviet weaponry, the price of any given weapon capability over the 1970-1982 period must have fallen relative to Soviet prices in general. In this respect, Soviet weapons are like American computers, whose prices have dropped enormously over the past decade despite inflation in the rest of the economy. The more advanced military equipment being produced for Soviet armed forces today would have cost many times more rubles to produce in 1970 than at present. So, the CIA estimate for 1982 of 13-13.5 percent, revised downward by us to 10.8-11.8 percent, both in 1970 prices, are certainly exaggerations; each would undoubtedly be a few points lower if recalculated in 1982 ruble prices. This is still a higher percentage than the U.S. figure of approximately 6.5-7 percent, but it is not twice as high, as the official figure shows—and, it must be remembered, Soviet GNP is slightly less than two-thirds of ours.

Beyond the spending-gap issue

The view of the military spending gap just outlined appears to be greatly at odds with the conventional wisdom that the USSR and its allies have been engaged in an enormous military build-up that has enabled them to reduce or eliminate NATO military superiority, and that this has been accomplished by virtue of increased defense expenditures. If the facts reveal no military spending gap in favor of the Warsaw Pact countries, how can this be reconciled with the Soviet bloc's alleged military build-up?

First, perhaps the military build-up, and the degree to which the Soviets have caught up with us, have been exaggerated. A military effort has many dimensions, and those who sound dire warnings tend to concentrate their attention on areas in which Soviet progress has been most rapid. Further, the emphasis is usually on numbers—quantity rather than quality. Some experts have testified that the U.S. defense effort represents, in part, a sacrifice of quantity for quality. This view was recently echoed by a CIA spokesman before the Senate Armed Services Committee. He stated that U.S. military equipment tends to be produced with "more sophistication, more quality, and better performance . . . [more safety], more quality control . . . a more highly designed product" than Soviet equipment. Apparently General John W. Vessey, Jr., Chairman of the Joint Chiefs of Staff, feels that this is a good thing. On May 11, 1982, after admitting that the Soviets had a quantitative superiority in many weapons, he testified to the Senate Armed Services Committee: "But, overall, would I trade with [Soviet Chief of Staff] Marshal Ogarkov? Not on your life."

Listening to the pessimists, one would never know that the United States spends almost three times as much as the Russians per soldier in training and maneuvers, or that our missiles are more accurate, or that our subs are superior to theirs, and so forth. One cannot doubt that the Soviets have been catching up, but the degree to which this is true may well have been overstated.

Second, if the Soviets have been catching up, how has this been possible if, as has been shown, the actual military-spending gap is much smaller than official estimates suggest? Military-expenditure comparisons measure cost, but not effectiveness or the wisdom of the expenditure choices. If the United States has been spending money less wisely in terms of our needs than the Soviets have in terms of theirs, then the Soviets could catch up without outspending us.

Much has been written in the past few years regarding the waste and the misdirected expenditures in our defense program. Some general categories of wasteful spending often mentioned are so-called gold-plating of weapons (for example, air conditioning and power steering in tanks); introducing some technology that is so complex (and expensive) that it can be neither easily operated nor properly maintained; introducing too many competing models and changing models too often, both of which prevent reduction of costs; allowing weapons suppliers very high profits and cost overruns not caused by inflation; and maintaining facilities and programs that no longer serve a military function but are good for some Congressman's constituency. Further evidence of inefficiency may be adduced from the fact that the balance of forces in Europe does not appear to reflect NATO's much higher levels of military spending.

What are the policy implications of all this? If the view of the military-spending gaps presented here is correct, the USSR is not way ahead of the United States as the Reagan Administration and others contend. (And NATO spending is far ahead of the Warsaw Pact's.) Moreover, if the USSR is catching up owing to waste and inefficiency on our part, it hardly makes sense to throw hundreds more billions of dollars into defense, at the expense of so many of this nation's major civilian priorities, without drastic revision of the military decision-making processes. Preventing the waste of $50 billion in cost overruns, misguided programs, and the like is as good a way to finance our military build-up as legislating $50 billion in new taxes or accepting a $50 billion increase in the national debt.

Finally, while many in this country view the Soviet Union and its allies as outspending us on defense, the Soviet Union probably views the spending competition in the terms just outlined—that is to say, as unfavorable to itself and its allies. If that is the Soviet view—and, in fact, the USSR sees itself as having to take on almost singlehandedly the whole Western industrial world, plus China and Japan—then the motivations behind its build-up may well be less ominous than the Administration believes.

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